

IN THE CLAIMS

Please amend the claims as follows:

Claims 1-6 (Canceled).

Claim 7 (Previously Presented): The medium according to claim 18, wherein the information storage medium is a one-sided, multi-recording layer type disc-shaped medium having a spiral track with a track pitch P_t ,

data recording is optically done on the track with the track pitch P_t via an objective lens having a numerical aperture NA and via an intermediate layer having a refractive index n and thickness t , and

a length δ of the non-data portion present between the predetermined recording units satisfies:

$$\delta \leq \pi (D + P_t) D / P_t$$

for $D = 2t \tan \{\sin^{-1}(NA/n)\}$.

Claim 8 (Previously Presented): The method according claim 19, wherein an information storage medium is a one-sided, multi-recording layer type disc-shaped medium having a spiral track with a track pitch P_t ,

data recording is optically done on the tracks with the track pitch P_t via an objective lens having a numerical aperture NA and via an intermediate layer having a refractive index n and thickness t , and

a length δ of the non-data portion present between the predetermined recording units satisfies:

$$\delta \leq \pi (D + P_t) D / P_t$$

for $D = 2t \tan \{\sin^{-1}(NA/n)\}$.

Claim 9 (Previously Presented): The apparatus according to claim 20, wherein an information storage medium is a one-sided, multi-recording layer type disc-shaped medium having a spiral track with a track pitch Pt,

data recording is optically done on the tracks with the track pitch Pt via an objective lens having a numerical aperture NA and via an intermediate layer having a refractive index n and thickness t, and

a length δ of the non-data portion present between the predetermined recording units satisfies:

$$\delta \leq \pi (D + Pt)D/Pt$$

for $D = 2t \tan \{\sin^{-1}(NA/n)\}$.

Claims 10-11 (Canceled).

Claim 12 (Previously Presented): The medium according to claim 15, wherein said medium is a recordable information medium on which data recording is continuously done to form a predetermined non-data portion between neighboring predetermined recording units along a track,

wherein a mark which indicates a recording start position for the continuous data recording for respective predetermined recording units is pre-recorded by a wobble modulation of the track.

Claim 13 (Previously Presented): The method according to claim 16, wherein after a mark position indicating a recording start position for continuous data recording is detected, continuous recording is started.

Claim 14 (Previously Presented): The apparatus according to claim 17, wherein after a mark position indicating a recording start position for continuous data recording is detected, continuous recording is started.

Claim 15 (Currently Amended): An information storage medium comprising:
at least one pair of neighboring tracks,
wherein upon continuously executing data recording for respective recording units along tracks on a disc-shaped information storage medium having a center of rotation, recording is done to form a non-data portion between the recording units along the tracks, ~~and~~
an angular position of the non-data portion formed on one of said at least one pair of neighboring tracks of the tracks with respect the center of rotation is different from an angular position of the non-data portion formed on the other of the neighboring tracks with respect to the center of rotation, and
a plurality of ECC blocks are formed on any of neighboring tracks such that the non-data portion is formed after one of the ECC blocks and before a next one of the ECC blocks.

Claim 16 (Previously Presented): A method of recording information on an information storage medium wherein upon continuously executing data recording for respective recording units along tracks on a disc-shape information storage medium having a center of rotation, recording is done to form a non-data portion between the recording units along the tracks, and an angular position of the non-data portion formed on one of at least one pair of neighboring tracks of the tracks with respect to the center of rotation is different from an angular position of the non-data portion formed on the other of the neighboring tracks with respect to the center of rotation, said method comprising:
generating data for an ECC block;

forming the recording units for the ECC block on the track; and
forming the non-data portion after the ECC block and before a next ECC block.

Claim 17 (Currently Amended): An apparatus for reproducing information from an information storage medium wherein upon continuously executing data recording for respective recording units along tracks on a disc-shaped information storage medium having a center of rotation, recording is done to form a non-data portion between the recording units along the tracks, and an angular position of the non-data portion formed on one of at least one pair of neighboring tracks of the tracks with respect to the center of rotation is different from an angular position of the non-data portion formed on the other of the neighboring tracks with respect to the center of rotation, and a plurality of ECC blocks are formed on any of neighboring tracks such that the non-data portion is formed after one of the ECC blocks and before a next one of the ECC blocks, said apparatus comprising:

a motor for rotating the information storage medium; and
a device configured to reproduce the information of the recording units from the medium rotated by said motor.

Claim 18 (Currently Amended): An information storage medium comprising:
a wobbled groove along a track configured to continuously undergo data recording for respective recording units along the track while being rotated;
predetermined data recording units formed along the track configured to continuously record data; and
a non-data portion δ formed between the data recording units being adjacent along the track,

~~wherein upon continuously executing data recording for respective recording units along the track on said information storage medium, recording can be done to form a non-data portion between the recording units along the track,~~

~~said medium is configured to enable the continuous data recording to form a non-data portion δ between the recording units being adjacent along the track, and~~

said non-data portion δ is configured to satisfy:

$$\delta \geq \tau f$$

where τ is a wobble period of the wobbled groove and f is an allowable rotation nonuniformity of the rotation of the storage medium.

Claim 19 (Previously Presented): A method of recording information on an information storage medium wherein upon continuously executing data recording for respective recording units along a track on said information storage medium, recording can be done to form a non-data portion between the recording units along the track, said medium has a wobbled groove along a track and continuously undergoes data recording for respective recording units along the track while being rotated, said medium is configured to enable the continuous data recording to form a non-data portion δ between the recording units being adjacent along the track, and said non-data portion δ is configured to satisfy:

$$\delta \geq \tau f$$

where τ is a wobble period of the wobbled groove and f is an allowable rotation nonuniformity of the rotation, said method comprising:

generating data for an ECC block;

forming the recording units for the ECC block on the track; and

forming the non-data portion after the ECC block and before a next ECC block.

Claim 20 (Previously Presented): An apparatus for reproducing information from an information storage medium wherein upon continuously executing data recording for respective recording units along a track on said information storage medium, recording can be done to form a non-data portion between the recording units along the track, said medium has a wobbled groove along a track and continuously undergoes data recording for respective recording units along the track while being rotated, said medium is configured to enable the continuous data recording to form a non-data portion δ between the recording units being adjacent along the track, and said non-data portion δ is configured to satisfy:

$$\delta \geq \tau f$$

where τ is a wobble period of the wobbled groove and f is an allowable rotation nonuniformity of the rotation, said apparatus comprising:

a motor for rotating the information storage medium, and
a device configured to reproduce the information of the recording units from the medium rotated by said motor.

Claim 21 (New): An method for reproducing information from an information storage medium wherein upon continuously executing data recording for respective recording units along tracks on a disc-shaped information storage medium having a center of rotation, recording is done to form a non-data portion between the recording units along the tracks, an angular position of the non-data portion formed on one of at least one pair of neighboring tracks of the tracks with respect to the center of rotation is different from an angular position of the non-data portion formed on the other of the neighboring tracks with respect to the center of rotation, and a plurality of ECC blocks are formed on any of neighboring tracks such that the non-data portion is formed after one of the ECC blocks and before a next one of the ECC blocks, said method comprising:

reproducing the information from one of the neighboring tracks; and
reproducing the information from the other one of the neighboring tracks.